304
A542
26

TECHNICAL NOTES
of the
STN PUB ALASKA FOREST RESEARCH CENTER
U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

LIBRARY
MAR 11 1968
ROCKY MOUNTAIN STATION

JUNEAU, ALASKA

No. 26

Girard Form Class Comparisons for Three Major Species in Southeast Alaska

Form class (Girard)[1] volume tables are extensively used in Southeast Alaska by both private industry and the U. S. Forest Service. The average Girard form class of the three important timber and pulp species (Sitka spruce, western hemlock, and western redcedar) in Southeast Alaska was recently determined in connection with other studies.

Form class of each tree was computed on the basis of both 16- and 32-foot logs. Cruisers often estimate pulptimber log heights and form class on the basis of 16-foot logs.

The average form class of Sitka spruce is 76.4 for 32-foot logs and 82.4 for 16-foot logs. The average form class of western hemlock is 75.8 for 32-foot logs and 82.2 for 16-foot logs. The difference between hemlock and spruce is not significant either in subclimax sawtimber or climax pulptimber, and the average for both may be considered as 76 for 32-foot logs and 82 for 16-foot logs. The minimum form class on the basis of 32-foot logs is about 64 while the maximum is approximately 86. The normal range in form class (32-foot logs) is from 72 to 82. The form class of Sitka spruce in Southeast Alaska is apparently higher than that of Sitka spruce in the Pacific Northwest.[2] As a general rule in Southeast Alaska very few thick-barked spruce are found and there may be fewer bell-butted trees in this region.

The average form class of western redcedar, based on only 46 trees, is 65 for 32-foot logs and 75 for 16-foot logs. It ranged from 55 to 76 for 32-foot logs. Western redcedar trees in the lower diameters (12-22 inches) tended to have a higher form class than trees of larger diameter, but more data are needed before this can be definitely established. There are indications, however, that height growth of western redcedar in Southeast Alaska may reach a maximum at a relatively early age. Old western redcedar trees become heavily buttressed and nearly conical in form.

Since volume estimates of pulptimber stands in this region are often based on 16-foot logs, knowledge of the relationship between form class of 16- and 32-foot logs is useful to the timber estimator. The relationship was determined, in this study, by plotting on cross-section paper 32-foot log form class as an independent variable, and 16-foot form class as the dependent variable. The relationship is linear or near-linear. The following tabulation shows the comparison.

1/ The term "form class" (Girard) means the percentage ratio inside the bark at the top of the first 16- or 32-foot log and the diameter outside the bark at breast height (DBH).

2/ Girard, James W. and Donald Bruce. Board foot volume tables for 32-foot logs. Mason, Bruce and Girard, Portland, Oregon.

Relationship between form class of 32 and 16 foot logs

Form Class 32' logs		Equivalent form class 16' logs	
Spruce & Hemlock	W. redcedar	Spruce & Hemlock	W. redcedar
60	54	68	66
62	56	70	68
64	58	72	69
66	60	74	71
68	62	75	72
70	64	77	74
72	66	79	75
74	68	80	77
76	70	82	78
78	72	84	80
80	74	86	81
82	76	88	83
84	78	89	84
86		91	

May 1955

H. E. Andersen

GPO 987163